

Buying and Storing Feeds

by: Karen Briggs October 01 1997, Article # 633
TheHorse.com

Feed is a major expenditure for any horse owner, and we all want it to be money well spent--both in terms of nutrition and quality. Getting the best value often means buying and storing feed in bulk. But unless that's done properly, you might find you lose a major portion of your investment to mold, insect infestation, or water damage, any of which can make your hay or grain unsuitable as feed for your horses. Here are some notes geared toward getting your best value, and protecting what you've got.

Inspection Time

In terms of nutrition, you get what you pay for. Thus, beware of underpriced hay or grain--it's usually of poor quality, and a false economy for your horses (although it might be perfectly suitable for cattle, which have less demanding--and delicate--digestive systems). Before you buy hay, crack open several bales. Hay not only should look green and relatively leafy and free of weeds, it should smell sweet, not dusty or moldy. Hay cut late will be full of seedheads, a tipoff that the nutritional content of the grasses and legumes is past prime. Patches of mold, wet spots, or unusually heavy bales are indicators that the hay was rained on after cutting, or stored in a damp location.

Buying in bulk generally will save you money--or at least persuade your supplier to bring the hay to you, rather than leaving the onus on you to pick it up. In terms of balancing your nutritional program, buying a large supply of hay from one grower with whom you've established a good relationship is an advantage--doing a nutritional analysis of that hay can allow you to balance your grain ration to complement the hay for your entire herd. That's considerably more difficult to do if you've laid in a supply of hay from many different growers and many different fields, as the numbers can vary considerably from batch to batch.

Hay prices fluctuate wildly from year to year and region to region, so it's impossible to make generalities; but a few inquiries from other local stables should provide you with a ballpark figure of what's a reasonable price to pay. Keep in mind that more alfalfa doesn't necessarily equal better quality in a hay. If you are not actively involved in the breeding game, your horses will do better on a lower-protein hay that is predominantly grasses, and you'll probably save money.

When examining grain, start with the nutritional analysis listed on the feed tag or the bag--and don't be afraid to ask questions of your feed store. Generally, bargain-priced feeds have inferior nutrition--and the money you spend on supplements to bring it up to par can be more than the amount you pay for a better feed formulation in the first place. Horses can survive on bargain mixes, but they won't thrive. Furthermore, a mid-range or premium feed formulated with care usually will save you a lot of guesswork in terms of balancing vitamins and minerals; they'll all be in there, in amounts calculated by the company's nutrition experts.

Whether you buy straight grains, a sweet feed mix, pellets, or extruded feed is a personal preference. It can be difficult, however, to assess the quality of the grains used in a pelleted or extruded product--the identical shapes give few clues. If you have whole grain to examine, look for plump, uniform grains with no sign of mold, very little dust or "fines," and no unpleasant smell. Large amounts of empty seed hulls, signs of insect infestations (often, cobwebs from grain moths), or excessive dustiness should be cause to reject the grain. If the product you're investigating is a sweet feed, beware of those coated with heavy additions of molasses. Molasses can be an outstanding cover-up for inferior quality.

Storage Strategies

Buying grain in bulk will save you money, but it's only practical for operations of 20 horses or more, because freshness becomes a major consideration. Many feed companies suggest that you keep no more than a month's supply of grain in your barn at any one time. Oxidation (a result of exposure to air and light) leads to the breakdown of nutrients in a grain ration, especially when the grains have been processed in some way (crimped, rolled, or cracked) to open the seed coat. Longer storage also can tempt rodents and insects--and even larger vermin such as raccoons or opossums--to take up residence and multiply the wastage factor.

If you have a large operation, you might want to install a grain bin, which can hold a ton of feed or more at one time. Some farms place their grain bin in the loft and build a chute to the ground floor for easy filling; others opt for the silo approach. Either way, a grain bin should be insulated, so that it helps keep the temperature constant inside--or at least, should be located out of direct sunlight. It should be sealed against mice and rats, but ventilated at its highest point so that moisture can evaporate (moisture buildup encourages mold). It should be made of a material that is clean and easy to keep clean. Finally, it should be impossible for horses to access on their own--for as we're all aware, horses who binge on grain are at high risk for colic and laminitis.

Installing a grain bin and buying in bulk can be an advantage if you are interested in making up a custom grain ration for your herd. Most feed mills will do this only in a minimum one-ton amount (some insist on two tons as the minimum). If you're feeding 20 horses or more, you can likely go through that much feed in a month's time--and you can get the mill to "blow" the feed directly into your bin on a regular basis, saving you a lot of lugging of feed bags. Standard grain mixes also can be purchased this way if you

have bulk storage facilities. Keep in mind, though, that some high-molasses products can be a poor choice for bulk storage, as they will make your chute gummy and sticky; and in winter, the feed might not flow out at all! Straight grains (i.e., corn or oats) and pellets are a better choice for a bulk set-up; if you prefer a sweet feed, ask the mill to reduce the amount of wet molasses in the recipe for easier handling.

For smaller operations, buying feed by the bag is a better choice. Some feed stores still will offer a small discount, or free delivery, if you buy in quantity (for instance, \$100 worth of feed at a time). But how much you buy will depend on the type of grain you're using.

Straight grains, such as whole oats, corn, and pelleted feeds, can have a shelf life of up to six months. Low-molasses sweet feeds also might be perfectly feedable for six months, but those with higher levels of molasses, or any feed that has supplemental levels of fats or oils (defined as 4% crude fat or higher) only should be stored for a maximum of three months, as they are more prone to spoilage. Grains that have been processed to break the seed coat will lose freshness very quickly; they only should be stored for a maximum of two to three weeks, and ideally, only for a few days. As a result, they often are best bought in very small batches. (Some farms, particularly in the United Kingdom, solve this problem by buying whole grains and crimping or rolling them at the farm just before feeding.) Check the manufacturing dates on the feed bag (they might be encoded, so ask your feed store staff to translate) to determine how long the feed has been at the store.

Once you get the feed home, it should be stored in an area that is off-limits to horses--ideally, somewhere with a latching door. Many farms use individual barrels or garbage cans to store one or two bags of feed at a time, and this method can work very well, provided that the lids close tightly to keep moisture and rodents out. (Galvanized garbage cans work better than plastic, as tenacious mice or rats actually can chew through the latter.) Wooden or fiberglass feed bins are another time-tested way to go, although it should be noted that large bins allow more of the surface area of the grain within to oxidize and lose nutrients. There's also the tried-and-true defunct chest freezer...which is not only insulated (thus keeping the interior temperature fairly constant), but easy to clean, rodent-proof, and practically horse-proof--not to mention cheap! They can be a hazard if you have small children who like to climb into things, however, so be sure to remove the latch.

In a pinch, you can keep your feed in its bags until it's time to feed, but because feed bags are easy for rodents (and horses) to nibble through, and can be exposed to moisture, it's less than ideal. You can minimize the problems by keeping the feed off the floor on wooden pallets, and by ensuring that they're stored in a closed-off area.

Keeping moisture levels down is probably the major consideration when it comes to feed storage, and even condensation on the lid of a feed storage bin or barrel can contribute to mold and bacterial growth if moisture levels rise above 13%. Insects, too, thrive at higher moisture levels; weevils, grain borers, and moths, all of which develop inside the grain kernels (and thus can be hard to detect until they emerge) proliferate only at moisture levels of at least 11 to 12%, and increase dramatically at 14% moisture and higher. Warm, humid days and cool nights are the worst conditions under which to store feed. Most farms have far fewer problems in winter than in summer.

As we mentioned previously, feeds with a higher fat content are more prone to spoilage; corn, soybeans, and mixed feeds with added fat all can experience rancidity, especially in hot and humid conditions. When rancidity (the oxidation of fat) begins, it results in the destruction of vitamins, especially the fat-soluble vitamins A, D, and E. Hay, too, suffers the loss of vitamins when it is exposed to air and light. For example, 80% of carotene (the precursor of vitamin A), and 73% of the vitamin E in legume hays such as alfalfa can be lost in three months of exposure to hot summer conditions. Hay stored outside also can suffer high losses due to mold; large round bales, which many farmers store outside, can experience losses of 30-38% of their nutrition over time.

All hay is best stored under a roof, and a three-sided hay shed often will pay for itself within a few years in terms of hay salvaged from losses due to weather. (Failing this, a waterproof canvas tarp thrown over the stack can be of some help; avoid plastic, which punctures easily, letting moisture in and trapping it.) Many farms store their hay in a loft over the horses' stalls, although opinions are divided; stacked, baled hay sometimes can generate considerable heat (especially when baled too wet) and holds a small risk of spontaneous combustion. The increased fire hazard must be weighed against the convenience of being able to easily grab and feed hay bales without going to a separate outside storage area.

If you do store hay in the same barn in which your horses are housed, pay particular attention to the ventilation in your loft. Air circulation is crucial in preventing heat buildup, so leave some room between stacks and avoid stacking right up to the ceiling. Many farms find that ventilation fans, cupolas, and vents are beneficial as well. You can monitor the heat between your hay bales by inserting a thermometer deep into the stack periodically. Any dramatic rise in temperature is a danger sign, and you should dismantle the stacks and break open any suspiciously warm bales outside the barn, well away from your buildings.

If your storage space is limited and you are forced to store round bales of hay outside, consider purchasing bales wrapped in plastic, or those treated with a spray of liquid tallow. The latter technique not only adds feed value (in the form of added fat) to the hay, but helps weatherproof it with no loss of palatability. Furthermore, it's relatively inexpensive, although not every farmer is equipped to apply this treatment.

Even under the best conditions, hay loses much of its vitamin content over time. Bales that have stood in a loft for a year have lost much of their nutritional value and are little more than "busy food." So while it's to your advantage to put in a year's supply at a time, it's false economy to invest in more than that. If you expect your horse population to fluctuate significantly over the coming year, it might be better to buy more hay in small batches as needed than to store too much.

Growing your own hay and grain is probably the best way to save money on feeding horses. If you have the land, you don't necessarily have to invest hundreds of thousands of dollars in farming equipment to harvest your crop; many horse owners lease out their land to local farmers, with an understanding that a certain percentage of the yield will be put in their barn in exchange for the farmer's harvesting and keeping (or selling) the remainder. Deals like this are best outlined in writing before the growing season begins to avoid misunderstandings.

Like any other business operation, horse farms can benefit from smart financial planning and a little forethought. Avoiding feed spoilage and getting the most mileage from your nutritional investment in your horses are integral to that game plan.